

Application No.: 10/520,816

REMARKS

Claims 1, 6, 11 and 16 are independent.

Claim 16 stands rejected under 35 U.S.C. § 103 as being unpatentable over Huang et al. '896 ("Huang"). This rejection is respectfully traversed because Huang is not prior art to the present application. The filing date of Huang is November 12, 2003, whereas the earliest effective filing date of the present application is April 8, 2003 in view of foreign priority. Enclosed is a certified English translation of JP 2003-104499 to perfect Applicants' claim to foreign priority. Accordingly, it is respectfully requested that this rejection be withdrawn.

Claim 11 stands rejected under 35 U.S.C. § 102 as being anticipated by Applicant's Admitted Prior Art (AAPA; Figures 3 and 4a-4f). This rejection is respectfully traversed for the following reasons.

Claim 11 recites in pertinent part, "the lower surface of the low dielectric constant film is in contact with the upper surface of the first nitrogen-non-containing insulating film." According to one aspect of the present invention, such a feature as set forth in the particular combination can make it possible to prevent an amine present in the carbon-containing silicon oxide film, or a basic material derived from nitrogen present in a silicon carbon nitride film, from diffusing into the resist through the via hole even if a chemically amplified resist is applied to the hole (*see, e.g.,* page 2, lines 3-23 and page 9, lines 6-13 of Applicants' specification). In contrast, the lower surface of the alleged low dielectric constant film 24 is NOT contact with the upper surface of the alleged first nitrogen-non-containing insulating film 21 but rather is separated by layer 23, as seen in Figure 3 of Applicants' drawings.

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Claims 1, 6 and 11 stand rejected under 35 U.S.C. 103 as being unpatentable over Steiner et al. ("Steiner") in view of AAPA. This rejection is respectfully traversed for the following reasons.

Each of the claims embodies at least a part of the trench being located in the same low dielectric constant film where the hole is formed. In contrast, the alleged hole 78 and trench 82 of Steiner are formed in different low dielectric constant films 18 and 42, respectively.

Moreover, the nitrogen-non-containing insulating film 30 is between the two different low dielectric constant films 18 and 42 (see Fig. 6), whereby the nitrogen-non-containing insulating film 30 is exposed on the inner surface of the hole 74 before the trench is formed (Fig. 5).

Accordingly, Steiner is subject to the following drawbacks: when a chemically amplified resist is applied to the inside of the hole (see Fig. 5 of Steiner), an amine present in the nitrogen-containing insulating film 30, or a basic material derived from nitrogen in the nitrogen-containing insulating film 30, diffuses into the resist through the hole. Steiner is silent as to such drawbacks and therefore provides no motivation for modification to the disclosed structure. Indeed, even assuming a trench and hole were formed in the same low dielectric constant film 42 of Steiner, the nitrogen-containing insulating film 30 would still be exposed on the inner surface of the hole before the trench is formed, leaving any such modification of Steiner subject to the aforementioned drawbacks and thus devoid of any motivation for doing so.

As anticipation under 35 U.S.C. § 102 requires that each and every element of the claim be disclosed, either expressly or inherently (noting that "inherency may not be established by probabilities or possibilities", *Scaltech Inc. v. Retec/Tetra*, 178 F.3d 1378 (Fed. Cir. 1999)), in a single prior art reference, *Akzo N.V. v. U.S. Int'l Trade Commission*, 808 F.2d 1471 (Fed. Cir.

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1986), based on the forgoing, it is submitted that the cited prior art does not anticipate the independent claims, nor any claim dependent thereon. The Examiner is directed to MPEP § 2143.03 under the section entitled "All Claim Limitations Must Be Taught or Suggested", which sets forth the applicable standard for establishing obviousness under § 103:

To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. (citing *In re Royka*, 180 USPQ 580 (CCPA 1974)).

In the instant case, the pending rejections do not "establish *prima facie* obviousness of [the] claimed invention" as recited in the pending claims because the proposed combinations fail the "all the claim limitations" standard required under § 103.

Under Federal Circuit guidelines, a dependent claim is nonobvious if the independent claim upon which it depends is allowable because all the limitations of the independent claim are contained in the dependent claims, *Hartness International Inc. v. Simplimatic Engineering Co.*, 819 F.2d at 1100, 1108 (Fed. Cir. 1987). Accordingly, as the independent claims are patentable for the reasons set forth above, it is respectfully submitted that all claims dependent thereon are also patentable. In addition, it is respectfully submitted that the dependent claims are patentable based on their own merits by adding novel and non-obvious features to the combination.

Based on the foregoing, it is respectfully submitted that all pending claims are patentable over the cited prior art. Accordingly, it is respectfully requested that the rejections under 35 U.S.C. § 102/103 be withdrawn.

CONCLUSIONS

Having fully responded to all matters raised in the Office Action, Applicants submit that all claims are in condition for allowance, an indication for which is respectfully solicited. If

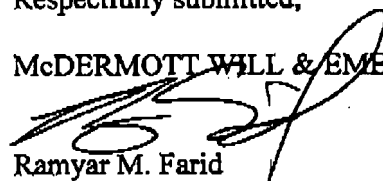
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there are any outstanding issues that might be resolved by an interview or an Examiner's amendment, the Examiner is requested to call Applicants' attorney at the telephone number shown below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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